A Study on Higher Secondary Teachers' Proficiency in Virtual Learning, Attitudes towards Online Resources, and Interest to Incorporate Technology in Teaching

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INTRODUCTION

"Education stands as a formidable catalyst, unlocking the gateway to a nation's prosperity. It stands as a cornerstone in the advancement and betterment of humanity. Recognized as the foundation for nation-building, the management of its quality becomes imperative. It emerges as the preeminent factor influencing the holistic development and affluence of any society. Education signifies the acquisition of knowledge and information, bestowing individuals with the means to lead improved and elevated lives. It stands as the singularly most significant tool for societal and economic rejuvenation. In recent times, the pedagogical landscape has shifted away from the conventional 'chalk and talk' approach, giving rise to the evolution of smart classrooms."

The pivotal role of education in facilitating both societal and economic advancement is widely acknowledged. Education serves as the conduit to fresh opportunities, fostering individual and collective empowerment. It also assumes a crucial role in keeping the youth of society well-informed and attuned to the latest developments. The integration of Information and Communication Technologies (ICTs) into educational institutions represents a significant undertaking. Presently, education through ICT has emerged as an effective, valuable, and engaging approach to teaching. Globally, nations have recognized the potency of ICT as a catalyst for transforming the teaching and learning process. Information technologies, coupled with communication technologies, have ushered in unprecedented shifts in how individuals communicate and interact within society. In our competitive and dynamic world, technology-based education has become one of the most demanding professions. This is due to the rapid

expansion of knowledge and the pressing need for educators and students to adeptly incorporate these technologies into their teaching and learning processes.

SIGNIFICANCE OF THE STUDY

We find ourselves in the midst of the information age, where the role of teachers in shaping the future is paramount. Educators bear the responsibility of nurturing the nation's minds and equipping students with invaluable knowledge. Technological advancements have ushered in an era of enhanced efficiency in the teaching and learning process. In this contemporary landscape, online resources have become indispensable tools for teaching, learning, and research. Recognizing this shift in learning trends, virtual learning applications have been introduced to educators and students in Bihar schools.

However, despite these advancements, previous research has revealed that teachers face practical challenges when integrating new strategies into the classroom. Many struggle with incorporating technology seamlessly into their regular curriculum and instruction, often requiring additional time for adaptation.

Hence, it becomes imperative to investigate the readiness of teachers to embrace the proposed virtual learning application. Their readiness stands as the linchpin for the effective implementation of this application. Without the willingness and preparedness of teachers to utilize the application, government efforts to introduce this innovation may fall short. Teachers might continue relying on traditional teaching methods, potentially depriving students of the benefits of technology-enhanced learning.

Additionally, examining teachers' acceptance of the virtual learning application is essential. Their acceptance is closely linked to their intention to use, satisfaction with, and enthusiasm for the application. If teachers do not find joy and satisfaction in using the application, they may abstain from its use. This, in turn, limits opportunities for students eager to leverage information and communication technology (ICT) for their education. It is disheartening when students are encouraged to explore digital learning tools but lack support from their teachers.

Lastly, assessing the usefulness and user-friendliness of the virtual learning application holds significant importance. Understanding the application's practicality and ease of use determines the likelihood of teachers embracing it. If the application proves cumbersome and not user-

friendly, it may discourage most teachers from its adoption, hindering its potential in the teaching and learning process. Given the challenges associated with integrating technology into the conventional curriculum and instructions, examining teachers' perceptions of the virtual learning application becomes a critical endeavor. These perceptions encompass readiness, acceptance, as well as the practicality and ease of use of the application, ultimately influencing teachers' intentions to incorporate the virtual learning application into their teaching methods."

Objectives of the Study

This study is driven by several key objectives, each shedding light on critical aspects of education and the integration of technology:

1. Exploring the Significance of Online Resources: One central objective of this study is to delve into the role of online resources in education. Online resources leverage the digital domain to offer a similar, if not enhanced, learning experience. They serve as conduits for the dissemination of current and up-to-date information, playing a pivotal role in the e-learning revolution. This study also aims to understand the key attributes of online resources, including their probability, interactivity, and versatility. Additionally, it examines the feelings and evaluations that individuals experience when utilizing new information technologies, influenced by their perceptions of usefulness and ease of use.

2. Empowering Higher Secondary School Teachers: Recognizing the elevated responsibilities of higher secondary school teachers, this study underscores the importance of equipping them with the latest technology. Teaching, often seen as an art, necessitates the integration of online resources into academic purposes, enhancing the learning experience for students. These teachers bear significant responsibilities for their students' development, requiring both content expertise and technological proficiency. To achieve this, they should acquire techno-pedagogical skills to advance their professional development.

3. The Digital Transformation and Online Resources: In today's digital era, where information is readily accessible at any time, this study acknowledges the pivotal role played by online resources in providing information to researchers, students, and academicians. The investigator seeks to gain insights into individuals' attitudes towards the usage of online resources for research and academic purposes.

4. Exploring Teachers' Interest in Technology Integration: Another vital objective of this study is to investigate teachers' level of interest in incorporating technology into their teaching practices.

Understanding teachers' interest is crucial, as it offers valuable insights into how they integrate technology into their pedagogical approaches. This research initiative is a fundamental step in empowering teachers to develop digital teaching materials through training in technology's application in the teaching and learning process, ultimately raising the level of educational technology usage in the field of education.

To achieve these objectives, the authors aim to gain a deeper understanding of how teachers perceive the integration of technology into their teaching methodologies, encompassing their attitudes, interests, and readiness to embrace the digital era in education.

REVIEW OF RELATED STUDIES

A literature review is essential for understanding prior research in a specific area, assessing methodologies, avoiding duplication, and guiding new research. It provides insights into what is already known, the efficacy of previous methods, and outstanding questions. This process is a fundamental aspect of the scientific approach, conducted across various scientific domains. In education, it serves as a foundation for advancing knowledge and ensures that future research contributes effectively. It saves time and effort by providing valuable insights.

Hostager, Todd J. (2014), conducted a study titled 'Online Learning Resources: Their Impact on Course Grades Mediated by Resource Utilization.' The research delves into the extent to which online learning resources can equalize educational outcomes by mediating the influence of grade point average (GPA) and gender on course grades. The study reveals that a heightened use of online resources has the potential to completely counteract the effects of gender and partially mitigate the influence of GPA on student grades in blended courses, which combine face-to-face and online components. The findings hold implications for future research and practices in both fully online and blended course settings.

Enrique GuausTermens (2015) explored 'Emotions Awareness in Virtual Learning Students.' The study focused on Computer Supported Collaborative Learning (CSCL) environments and the need to investigate novel forms of interaction that stimulate skills like human communication and critical thinking to enhance the learning experience. It emphasized leveraging interaction data from CSCL activities to extract emotional insights from group members, fostering

emotional intelligence at both individual and group levels. Key considerations included how to label affective behavior in educational discourse and how to effectively present emotional information to group participants.

Kumar, C. Ashok (2015) conducted a study titled 'A Study on Attitude and Opinion towards Using Computer Technology in Teaching among B.Ed. Trainees in Tiruchirappalli District.' The primary aim of the study was to investigate whether there were significant differences in the attitude and opinion of B.Ed. trainees regarding the use of computer technology in teaching based on specific independent variables. The research utilized a normative survey technique and employed the 'Opinion towards Computer Usage' and 'Attitude towards Computer Technology' inventory developed by Karpaga Kumaravel.K. and Amulraj. A. (2013) for data collection. The study involved a stratified representative sample of 150 B.Ed. trainees from self-financed B.Ed. colleges in Tiruchirappalli district. The major findings indicated significant differences in attitudes towards computer technology in teaching based on age groups, educational backgrounds (Undergraduates vs. Postgraduates), and rural and urban locations.

Molka-Danielsen et al. (2016) conducted a study titled 'Investigating Affective Learning in a 3D Virtual Learning Environment: The Case Study of the Chatter dale Mystery.' Their research was driven by the potential of virtual technologies as engaging pedagogical tools, particularly for second language (L2) learning. This study offers a descriptive analysis of a case study that explores affective learning outcomes. It extends the Affective Learning Model (ALM) in the context of gaming within a 3D Virtual Learning Environment (VLE) for supporting L2 courses. The research identifies the advantages of using a serious game in the selected VLE and presents evidence that gaming activities promote affective learning outcomes, aligning with previous ALM research. Data for this investigation were collected as part of the Euroversity project, funded by the European Commission.

Reisoglu et al. (2017) conducted a meta-review titled '3D Virtual Learning Environments in Education.' Their study aimed to explore recent empirical research on 3D virtual learning environments. They analyzed a total of 167 empirical studies that utilized 3D virtual worlds in education. The findings revealed that the 'Second Life' platform was commonly employed in

these studies. Case study designs and quasi-experimental approaches were prevalent. Most studies had sample sizes below 100. These environments were primarily designed for learning support, simulation, and gaming. Language learning and science were the most frequently studied topics. Collaborative and exploration-based learning strategies were frequently employed. The study also assessed emotional and cognitive outcomes, including presence, satisfaction, communication skills, and engagement.

Andrei, Elena (2017) conducted a study titled 'Technology in Teaching English Language Learners: The Case of Three Middle School Teachers.' The research focused on how three middle school English as a Second Language (ESL) teachers utilized technology in their classrooms. While technology has the potential to support English language learners, its effective integration depends on teachers' attitudes, beliefs, and available resources. The study involved teacher interviews and classroom observations, revealing a diverse range of technology, including digital boards, projectors, laptops, iPods, iPads, and internet connectivity. Despite limited training and technical support, the teachers were comfortable with the available technology, though there was room for expansion. Recommendations included allocating more time for technology-integrated lesson planning and providing further professional development in technology use.

Koroleva, D. O. (2018) conducted a study on the 'Potential for Using Mobile and Networking Technologies in Teaching.' The research explored the accessibility and usage patterns of mobile and networking technologies among schoolchildren of varying ages and geographical locations. The author examined the potential applications of modern technologies in education, highlighting their potential advantages, especially for rural schools. The article also discussed the contemporary trend towards establishing a seamless educational environment through e-learning.

OPERATIONAL DEFINITIONS OF KEY TERMS

In order to provide clarity and precision in the present study, we have defined some essential terms as follows:

1. **Awareness of Virtual Learning:**

Awareness of Virtual Learning refers to an individual's conscious experience of the virtual classroom during its occurrence. It encompasses the capacity to directly perceive, know, sense, or be cognizant of the virtual classroom environment. On a broader scale, it signifies the state of being conscious and mindful of elements within the virtual classroom.

2. **Attitude towards Online Resources:**

Attitude towards Online Resources represents a teacher's positive or negative disposition regarding the efficacy of online resources. It encompasses perceptions of the ability to store, retrieve, and access, manipulate, and transmit information in digital formats, as well as the performance of target behaviors, such as utilizing an online system. Essentially, a teacher's attitude towards these factors is shaped by their personal perception of the ease with which online resources can be used, both on an individual level and within the classroom teaching context.

3. **Interest towards Technology in Teaching:**

Interest towards Technology in Teaching reflects teachers' engagement and enthusiasm for various educational technologies. It acknowledges that teachers have benefited from diverse educational technologies and have acquired the skills to integrate technology effectively into their classrooms. Furthermore, it recognizes that students are increasingly drawn to learning through technology. In the context of this study, *Technology in Teaching* encompasses any tools, methods, or practices that enhance classroom learning, whether it be through blended, face-to-face, or online modes of instruction.

VARIABLES USED IN THE PRESENT STUDY

The following are the variables used for the present study

Independent variable

Attitude towards using Online Resources

Interest towards Technology in Teaching

Dependent variable

Awareness of Virtual Learning

Demographic variable

a) Gender Male / Female

b) Locality of the School Rural / Urban

c) Handling Subjects Arts / Science

d) Internet Users Yes / No

e) Type of Board State Board / CBSE

OBJECTIVES OF THE PRESENT STUDY

The followings are the objectives formulated for the present study.

1) To find out the level of virtual Learning Awareness of higher secondary teachers.

2) To find out the level of Attitude towards using Online Resources of higher secondary teachers.

3) To find out the level of Interest towards Technology in teaching of higher secondary teachers.

4) To find out whether there is any significant difference between the Virtual Learning Awareness of higher secondary teachers based on the demographic variables

5) To find out whether there is any significant difference between the Attitude towards using Online Resources of higher secondary teachers based on the demographic variables; namely

6) To find out whether there is any significant difference between the Interest towards Technology in Teaching of higher secondary teachers based on the demographic variables

7) To find out whether there is any significant relationship between the Virtual Learning Awareness and Attitude towards using Online Resources of higher secondary school teachers.

8) To find out whether there is any significant relationship between the Virtual Learning Awareness and Interest towards Technology in teaching of higher secondary school teachers.

9) To find out whether there is any significant relationship between the Attitude towards using Online Resources and Interest towards Technology in teaching of higher secondary school teachers.

10) To find out whether there is any significant relationship between the demographic variables of Virtual Learning Awareness and Attitude towards using Online Resources of higher secondary school teachers.

11) To find out whether there is any significant relationship between the demographic variables of Virtual Learning Awareness and Interest towards Technology in teaching of higher secondary school teachers.

12) To find out whether there is any significant relationship between the demographic variables of Attitude towards using Online Resources and Interest towards Technology in teaching of higher secondary school teachers.

13) To identify the demographic variables which are contributing to the Virtual Learning Awareness of higher secondary school teachers.

14) To identify the demographic variables which are contributing to the Attitude towards using Online Resources of higher secondary school teachers.

15) To identify the demographic variables which are contributing to the Interest towards Technology in Teaching of higher secondary school teachers.

HYPOTHESES OF THE STUDY

The following are the hypotheses formulated for the present study.

H1. There is no significant difference between the Virtual Learning Awareness of higher secondary teachers based on the demographic variables

H2. There is no significant difference between the Attitude towards using Online Resources of higher secondary teachers based on the demographic variables

H3. There is no significant difference between the Interest towards technology in teaching of higher secondary teachers based on the demographic variables

H4. There is no significant relationship between the Virtual Learning Awareness and Attitude towards using Online Resources of higher secondary school teachers.

H5. There is no significant relationship between the Virtual Learning Awareness and Interest towards Technology in Teaching of higher secondary school teachers.

H6. There is no significant relationship between the Attitude towards using Online Resources and Interest towards Technology in Teaching of higher secondary school teachers.

H7. There is no significant relationship between the demographic variables of Virtual Learning Awareness and Attitude towards using Online Resources of higher secondary school teachers.

H8. There is no significant relationship between the demographic variables of Virtual Learning Awareness and Interest towards Technology in Teaching of higher secondary school teachers.

H9. There is no significant relationship between the demographic variables of Attitude towards using Online Resources and Interest towards Technology in Teaching of higher secondary school teachers.

METHOD OF THE STUDY

Present study is a Descriptive Survey Research based on quantitative findings. The present investigation was undertaken by using normative survey method. The survey method gathers data from a relatively large number of cases at a particular time. Sample will select and information will collect through suitable tool and after statistical analysis result and conclusion will drown.

SAMPLE OF THE STUDY

In present research 800 teachers will select from different higher secondary schools in Darbhanga District. Stratified Random sampling technique would be used in the selection of the sample of 800 higher secondary school teachers working in schools situated in Darbhanga district of Bihar, India. Out of these 800 teachers, 400 teachers from Government higher secondary schools, 400 teachers from self-finance (private) higher secondary schools will select as samples for conducting this study and may also divide on demographic bases according to the demand of study.

TOOLS USED IN THE STUDY

The following tools are used in the present study.

1). Virtual Learning Awareness Scale will develop and validate by the Investigator with the help of Research Supervisor and will adopt in present research.

2). Attitude towards using Online Resources scale constructed and standardized by Nagasubramani P.C., (2016) will be adopt by the researcher for this study.

3). Interest towards Technology in Teaching Scale constructed and standardized by Nagasubramani P.C., (2010) will be adopt by the researcher in present study.

Research Scholar may also use other suitable tools according to the demand and salability of the research.

DELIMATIONS OF THE STUDY

1. As Bihar is a vast state it is difficult to cover the entire geographical area in a single study like the proposed one. Therefore, the sample would be selected from Darbhanga District Government and self-finance (private) higher secondary schools only.
2. The study is conducted only on XI & XII handle teachers.
3. Out of large number of factors associated with the virtual learning awareness of higher secondary school teachers, the present study is delimited too few of them Gender, Locality of the School, Type of Board Attitude towards using Online Resources and Interest towards Technology in Teaching.

4. The sample will confine only to 10 Government and 10 self-finance (private) higher secondary schools.
5. The background variables will confined only to Gender, Locality of the School and Type of Board.

STATISTICAL ANALYSES

Appropriate statistical tools may use for data analysis like mean, correlation, t test, etc

SPSS may usc to draw a scientific result.

RESULTS AND DISCUSSIONS

On the basis of scientific analyses results of the findings will be discussed in the light of review of literature.

CONCLUSIONS AND SUGGESTIONS

Findings of the results and discussions will be concluded in this section with suitable

Suggestions if Necessary.

Thus, the present investigation will be based on following chapters which will be included in the thesis.

CHAPTER-I **INTRODUCTION**

CHAPTER-II **REVIEW OF LITERATURE**

CHAPTER-III **RESEARCH METHODOLOGY**

CHAPTER-IV **STATISTICAL ANALYSES**

CHAPTER-V **RESULTS AND DISCUSSIONS**

CHAPTER-VI **CONCLUSION AND SUGGESTIONS**

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